Meeting of the Decommissioning Community Workgroup (#20)
Tuesday, July 13, 2004
Huron Public Library, Huron

The meeting began at 7 p.m. Present were the following seven Workgroup members: John Blakeman; Janet Bohne; Mark Bohne; Chris Gasteier; Montez McDuffie; Ralph Roshong and Mary Warren. Present from NASA were: Tim Polich, Decommissioning Project Manager; Keith Peecook, Senior Project Engineer; Sally Harrington, Public Affairs Specialist; Frank Greco, NASA Glenn Program Manager and Peter Kolb, Decommissioning Project Environmental Manager. Also present were Steve Neilsen of the U.S. Army Corps of Engineers (USACE), and Susan Santos and Michael Morgan of FOCUS GROUP. There were seven members of the public in attendance, along with reporter Brad Kane from the *Sandusky Register*.

Tim Polich provided welcoming remarks and introductions. He noted that NASA was hosting the premiere of the documentary video "Of Ashes and Atoms" at the Sandusky State Theatre the next evening. Susan Santos of FOCUS GROUP followed and reviewed the minutes from the April 20 meeting (which the members accepted), then reviewed the agenda for the July 13 meeting. She noted that in addition to the Project Update presentation, NASA was providing an overview of the Decommissioning Project, to give newer Workgroup members more of a "big picture" of the work being done, something they felt would be helpful to their understanding of the project.

Overview & Project Update

Keith Peecook presented an overview of the Decommissioning Project, intending to answer the questions: "What is decommissioning. What is (NASA's) approach? What is the end result going to be?" He emphasized the safety of the workers, the public and the environment as NASA's priority. Keith talked briefly about Plum Brook Station and then the construction of the Reactor Facility, its shutdown and the rationale and preparations for decommissioning. He said the end result of decommissioning is that a person would hypothetically be able to live on the 27 acres of the facility, drink groundwater from the site and raise crops there, and not be exposed to more than 25 millirems of radiation above a person's annual background level, a level he said was "considered harmless." He described the four major steps to decommissioning including (1) removing the reactor internals, core and tank; (2) removing all other contaminated equipment and debris; (3) thoroughly decontaminating all building surfaces; and (4) validating that the at the facility is clean, then demolishing all existing structures and restoring the site.

Keith said that the removal of loose equipment from Reactor Facility buildings was "basically done" and removal of fixed equipment was far along with the goal of stripping the buildings to the bare walls. He said that segmentation activities would remove the bulk of the radioactive inventory at the facility, and noted that this process was currently 80 to 85 percent complete. He showed "before and after" slides of segmentation, adding that the reactor tank was now empty of internals, all of which had been or would soon be packaged, and that the first cuts on the tank itself would be made soon. He said workers from subcontractor Wachs Technical Services Inc., had erected scaffolding inside the tank and would be using a specially devised track mounted milling machine to do the cutting of the tank itself this Phase 4 segmentation work.

With the bulk of the radioactive inventory removed, Keith observed the radiation exposure (dose) to workers was now just 1-2 millirem per hour, the same dose was that workers had been exposed to when they were using shielding and long-handled tools during the earlier phases of segmentation. Because of the low dose, he explained workers do not need to erect special platforms but can do the work directly. He gave the example of workers taking only two days to

remove the thermal shields – instead of the originally planned nine – since the work was done directly with "hands on," rather than doing the work from an overhead platform, with long handled tools. Keith added that, in addition to using the milling machine to make the cuts, the crew may need to use a "plasma torch" to make two thermal cuts. In addition, workers will be removing asbestos from the tank area as the remaining segmentation activity takes place.

Workgroup member Mark Bohne asked if the low dose rates meant that there was little contamination to the concrete of the Reactor Building. Keith said this appeared to be the case, but added that NASA would have to take many more samples to know for sure. He said NASA hopes that there was little activation of the rebar metal in the concrete of the protective bioshield and if that proved to be the case, the entire shield would not have to be removed. This would save time and money as any "clean" (radiation levels at the Derived Concentration Guideline or below) materials located more three feet below grade can remain in place (all of the reactor tank and bioshield are located well below grade). Tim added that the thermal shields that had once been in place in the tank had "done their job" in absorbing the activation. But if it is shown that the rebar has been highly activated, Keith said the bioshield would be "chopped up" and sent to the Envirocare licensed disposal facility in Utah. Workgroup member John Blakeman said that the public would want to know that NASA is not just burying its waste and Keith emphasized that any materials remaining in place would have to meet the cleanup levels.

Next, Keith discussed fixed equipment removal operations, noting that work is being done in several areas of the Reactor Facility and includes removing piping systems in buildings such as the Primary Pump House (where two pump rooms have been cleaned out and a third is nearly complete) and at the minus 15 foot level of the Reactor Building. He said several large structures (including the water tower and exhaust stack) had been demolished last year and that NASA continues to demolish buildings that do not contain basements, including the Compressor Building. He pointed out that in many areas of the Reactor Facility, there was little or no contamination. In the Compressor Building, the metals used in its construction can be "free released" and collected by the NASA Glenn recycling contractor, Blue Star Metals, thus saving on the need for additional shipments to Envirocare.

Decontamination Work

Keith said that Step 4 of the Decommissioning Project is to thoroughly decontaminate all surfaces of Reactor Facility buildings after the rooms have been stripped of equipment "to the bare walls." Surfaces must be cleaned so that they meet "derived concentration guidelines" that must be independently verified before the U.S. Nuclear Regulatory Commission (NRC) will terminate NASA's reactor license. After that, he said NASA would demolish all structures to three feet below grade, and then put topsoil over the area.

Keith talked about the methods for decontamination, emphasizing that NASA is using, primarily, a "scabbling" process, in which workers use hand held grinding tools (equipped with vacuum hoses to capture the dust that is generated) to remove concrete at the rate of a quarter inch at a time. He said the crew currently doing this work in the Primary Pump House - the first building to undergo decontamination – reported that work is "going very well right now…The results look good" with the contamination less than a quarter inch deep in the concrete. He said this building was a test case "for applying decontamination technology." He also said that NASA must provide the NRC with a Final Status Survey Plan that will tell the NRC "how we plan to prove that we have reached our final cleanup levels," noting that the NRC may approve the plan or tell NASA "to take a different approach (to cleanup) here.... or take more samples there."

Waste Shipments

Keith then discussed shipments of low-level radioactive waste (LLRW) from the Reactor Facility. He said LLRW shipments had been taking place for 50 years with an excellent safety record. He noted that there were two remaining shipments of Class B and C wastes (mostly from segmentation, some from the Hot Lab cleanup) that would be sent to the Barnwell licensed disposal facility in South Carolina. He mentioned a number of types of containers that NASA is using on the Decommissioning Project, including B-25 boxes and larger Sealand containers for lightly contaminated Class A waste and casks for the Class B and C shipments. He noted that the Class B and C waste is first placed in a one-inch thick steel liner and that the liner is the placed in a special shipping cask that consists of two inches of steel, covered by six inches of lead, which is covered by another two inches of steel. Keith said that, to date, NASA has made four Barnwell shipments (one in 2003 and three so far in 2004). Tim Polich pointed out that shipments to Barnwell have to be off the road an hour before sunset and cannot be back on the road until an hour after sunrise, per federal regulations.

Keith also discussed shipments of Class A waste to Envirocare, which are made via the Alaron licensed reprocessing facility in Pennsylvania. He reported that, to date some three million pounds of LLRW, mostly in the form of loose and fixed equipment, have been sent to Envirocare, including 800,000 pounds since April 2004. He also said the three Barnwell shipments made so far this year had totaled 8,000 curies of radiation (the bulk of the radioactive inventory) and that the last two shipments, planned for later this summer, would have a lower curie content. Len Homyak, a NASA retiree, asked if there was any liquid waste on site and Keith said there were "a couple of thousand gallons" from the building sump, and that NASA would sample it to see if the liquid was clean. Keith stressed that NASA will not ship any liquid waste and explained that there was a process for making concrete blocks out of the liquid waste. Steve Neilsen of USACE added that there was also a limited amount of liquid waste from asbestos removal operations, and that workers use cat litter to absorb the water in the asbestos waste bags.

Workgroup member Chris Gasteier asked about a crane, which had emitted smoke on July 9, resulting in a response from the Perkins Fire Department and a small article in the *Sandusky Register*. Keith explained that there actually had not been a fire on this small "gantry crane" and that it was not the same crane used to lift the liners into shipping casks. He explained that the crane operator saw the smoke and shut the crane down, per standard operating procedure. The fire department promptly responded and, using heat sensors, determined that an actual fire had not occurred. He added that the incident stemmed from a problem with the crane motor, such that it was "burning lacquer" off the crane's motor windings and said a contractor was coming to evaluate the crane and make the necessary repairs.

Storage of Cadmium-containing Control Rods

Keith then talked about the need for temporary storage of control rods that had been removed from the Hot Dry Storage pit of the Hot Lab. He said the rods has once been used in reactor experiments and were made of cadmium that was clad with nickel steel. Keith explained that the rods presented a disposal challenge because they were above the activity level that Envirocare can accept. He said waste with this radiation content would normally go to Barnwell but said that because the rods contain cadmium, they are considered "mixed waste" and cannot be disposed of there. He said NASA is working out an interim storage solution, on site near the Reactor Facility, under a license granted to NASA Glenn by the NRC. The plan is to temporarily store the rods in a liner and cask that would then be placed in an interim storage structure – a two-foot thick concrete vault in a secure area near Plum Brook's shipping and receiving area.

Workgroup member Janet Bohne asked why the rods could not be stored in one of the bunkers from the old Ordnance Facility but Tim said the storage container would be too big for the bunker. She asked how long the on-site storage would last and Keith said about two to three years, by which time NASA hopes to have an agreement in place to dispose of the rods at a U.S. Department of Energy facility in Idaho or Washington State. He added that the interim storage solution would enable NASA to keep gong forward with decommissioning work that could otherwise be held up. Tim said that until the license was amended to allow the temporary storage, NASA would store the 65,000-pound transfer cask containing the liner and rods on a tractor-trailer inside the Reactor Facility fence and eventually moved to the vault that will be constructed later this year

Health and Safety Issues

Keith pointed out that decommissioning safety includes more than just radiological safety, and that most safety issues were construction related. He showed slides of workers wearing protective gear while operating a “plasma torch" cutting tool and also talked about dust control measures, including the use of vacuum hoses, with Keith noting, “We minimize dust at the point of contact.” He also talked about radiation safety, noting that NASA had to put into place an ALARA (As Low As Reasonably Achievable) plan for the entire project, designed to limit radiation exposure. He noted that the project “budget” for exposure was “69 Man Rems” but said that to date, total exposure had been only 10-12 “Man Rems,” explaining, “We make a deliberate effort to reduce exposure.” He also showed slides of work in the Hot Cell area of the Hot Lab being conducted, using- long handled tools to minimize exposure.

NASA reitree Jim Martz asked about the final cuts that will be made on the reactor tank, noting that these would bring workers closer to the asbestos existing in this area. Keith said that when the segmentation crew gets to the last quarter inch of steel, Toltest, the licensed asbestos removal contractor, “will make the last few cuts,” adding that most of the asbestos removed during decommissioning is being sent to Envirocare. John Blakeman asked if, the cadmium control rod issue aside, the project was going according to expectations. Keith responded, “It’s safe to say things are going well" but added that NASA must always be on the lookout for “known unknowns and unknown unknowns…You always have contingencies. When you reach one, you stop the affected work until you fix the problem.”

Project Budget and Schedule

In response to an earlier request from Workgroup member Ralph Roshong, Tim gave a brief budget and schedule presentation, saying the project operated on a “cost plus” contract. He noted that project contractors must submit reports each month and that NASA conducts annual and “event driven” updates, and looks at “our phasing plan twice a year to see how we're spending our money.” Ralph said that at the first Workgroup meeting he ever attended (Quarterly Meeting #2, in December 1999) he was told that the Decommissioning Project budget was $250 million. Tim responded that he has never given any figure other than a ceiling of $160 million which has been quoted in media accounts, with Keith adding that “whoever used that ($250 million) figure misspoke.” Mark Bohne, who is also a member of the Restoration Advisory Board for the Ordnance Facility project (a USACE cleanup project separate from decommissioning but also taking place at Plum Brook Station) said that someone might have inadvertently put together the budgets for both projects in using the $250 million figure.

NASA Program Manager Frank Greco pointed out that the contractor (MWH Constructors) works on what is termed an Earned Value System, in which the contractor must show that it

performed a particular piece of work and at what cost. Tim added that in the spring of 2003, NASA changed from a contract on a fixed fee basis (with an almost 10 percent base) to an award fee basis (with a three percent base). He also discussed the overall project schedule, noting the "critical path…the things that have to get done" before another part of the project can start, pointing to the Reactor Building as a critical path area. Tim also showed a chart that compared budgeted dollars from each year of the project (2002 to 2007) with the current plan and actual costs to date. Ralph said the chart was a helpful tool and asked that it be updated for each quarterly Workgroup meeting, with Tim agreeing to do so.

Community Relations Update

Sally Harrington gave an update on Community Relations activity. She noted that the quarterly newsletter had been mailed to some 2,200 recipients the week of July 6 and Workgroup members said they had received their copies. She also mentioned that a new fact sheet on Final Status Survey had been completed (copies were made available at the Workgroup meeting, and at the documentary video premiere). Sally also said that NASA had sent to everyone on the mailing list a special postcard invitation to the premiere, and that NASA had purchased both print and radio advertising. Several Workgroup members said they had read or heard the ads. She also mentioned the reception that would be taking place before the premiere, for NASA retirees and others who appeared or helped in the production of the video, and for Workgroup members.

Sally discussed other activities taking place at Plum Brook Station (PBS) especially research work being conducted at the Space Power Facility on "solar sails," made of Mylar, which NASA hopes can help power deep space flight by capturing solar winds. She also said that Plum Brook Chief of Operations Rich Kunath would give a brief presentation on PBS operations at the October Workgroup meeting on Tuesday, October 19 at 5:30 p.m., and staff a display at the Community Information Session that will follow at 7 p.m. She also noted that PBS is thinking about holding an Open House to celebrate its 50th anniversary in 2006.

Jim Martz asked about what will happen with the video after its July 14 premiere and Sally said there are tentative plans to show it during the Community Information Session, adding that DVD copies will be distributed to NASA retirees, area schools and libraries and to community organizations in Erie County. Jim asked about having it shown on the Public Broadcasting System and Sally said this might be possible if NASA is approached, but that "we cannot market something on our own," adding that details are being worked out at NASA headquarters.

Susan Santos and Keith then briefly discussed the Reactor Facility Tour that NASA will provide to Workgroup members on Tuesday September 16. Keith said the plan was to have Workgroup members meet by the PBS front gate at 5:30 p.m., with a member of the Decommissioning Team meeting the Workgroup members to get them registered with PBS security. The tour itself will begin about 5:45 and last approximately 30 minutes, to be followed by an informal half-hour meeting at which light refreshments will be served. NASA will send a formal invitation letter to Workgroup members, with a response date, in early September.

Next Meeting

The next Workgroup meeting will take place on Tuesday, October 19 at 5:30 p.m. at the Sandusky High School Cafeteria. The Community Information Session will follow at 7 p.m. A light supper will be available to Workgroup and Decommissioning Team members starting at 5:15 p.m.

The meeting adjourned at 9:15 p.m.